

What is claimed is:

1. A data transmitting system for transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a first device and a second device are connected, the data to be processed being transmitted by said first device and received by said second device,

said first device including:

an identification information obtaining system that transmits first data through the network using a first address which does not specify a destination to obtain identification information of the plurality of devices except said first device,

said second device including:

an identification information transmitting system that transmits second data containing the identification information of said second device through the network using a second multicast address in response to the first data transmitted by said identification information obtaining system of said first device;

said first device further including:

a data transmitting system that transmits the data to be processed through the network using a third multicast address so that the data to be processed is received by

said second device which is one of devices which transmit the identification information to said identification information obtaining system,

said second device further including:

a data receiving system that receives the data to be processed transmitted by said data transmitting system of said first device.

2. The data transmitting system according to claim 1, wherein the first address is a first multicast address.

3. The data transmitting system according to claim 1, wherein said first device notifies said second device of the second multicast address,

wherein said identification information transmitting system of said second device uses the second multicast address notified by said first device.

4. The data transmitting system according to claim 1, wherein said first device further includes a selecting system that selects one of the devices which transmit the identification information to said identification information obtaining system,

wherein said data transmitting system transmits the identification information of the selected one of the

devices with the data to be processed through the network using the third multicast address,

wherein the selected one of the devices is the second device.

5. The data transmitting system according to claim 1, wherein said identification information obtaining system of said first device incorporates the identification information of said first device into the first data,

wherein said identification information transmitting system of said second device incorporates the identification information of said first device contained in the first data into the second data.

6. The data transmitting system according to claim 1, wherein the identification information of the devices on the network includes at least one of a device name, location information, a MAC address and an IP address of a device on the network.

7. The data transmitting system according to claim 2, wherein the first multicast address, the third multicast address and the second multicast address are different from each other.

8. The data transmitting system according to claim 2, wherein at least two of the first multicast address, the third multicast address and the second multicast address are equal to each other.

9. The data transmitting system according to claim 2, wherein all of devices configured to be said second device on the network receive data transmitted by using the first multicast address.

10. The data transmitting system according to claim 1, wherein part of devices configured to be said second device on the network receives data transmitted by using the third multicast address.

11. The data transmitting system according to claim 1, wherein only said first device of the devices connected to the network receives data transmitted by using the second multicast address.

12. The data transmitting system according to claim 1, further comprising an address determining system that determines the second multicast address.

13. The data transmitting system according to claim 1,

wherein said data receiving system of said second device transmits third data indicating an acknowledgement of receipt of the data to be processed when said data receiving system receives the data to be processed, said data receiving system transmitting the third data through the network using a fourth multicast address,

wherein said data transmitting system of said first device receives the third data transmitted by said data receiving system of said second device.

14. The data transmitting system according to claim 13, further comprising an address determining system that determines the third multicast address and the fourth multicast address.

15. The data transmitting system according to claim 14, wherein said first device and said second device join address groups whose addresses are determined by the address determining system.

16. The data transmitting system according to claim 1, further comprising an address determining system that determines the third multicast address used for transmitting the data to be processed.

17. The data transmitting system according to claim 16, wherein said second device joins an address group whose address is determined by the address determining system.

18. The data transmitting system according to claim 16, wherein said first device includes said address determining system.

19. The data transmitting system according to claim 16, wherein said second device includes said address determining system.

20. The data transmitting system according to claim 1, wherein said second device is a printer, wherein the data to be processed is print data.

21. A terminal device for transmitting data to be processed through a TCP/IP-based network to which a plurality of devices are connected, comprising:

an identification information obtaining system that transmits first data through the network using a first multicast address to obtain identification information of the plurality of devices on the network; and

a data transmitting system that transmits the data to be processed through the network using a second multicast

address in order that the data to be processed is received by a requested device which is one of devices which transmit the identification information to said identification information obtaining system.

22. The terminal device according to claim 21, further comprising a selecting system that selects one of the devices which transmit the identification information to said identification information obtaining system,

wherein said data transmitting system transmits the identification information of the selected one of the devices with the data to be processed through the network using the second multicast address,

wherein the selected one of the devices is the requested device.

23. A terminal device for receiving data to be processed through a TCP/IP-based network to which a plurality of devices are connected, comprising:

an identification information transmitting system that transmits first data containing identification information of said terminal device through the network using a first multicast address in response to a request transmitted by a requesting device on the network; and

a data receiving system that receives the data to be

processed which is transmitted by said requesting device through the network using a second multicast address.

24. A method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting from said requesting device a search packet through the network using a first multicast address so as to obtain identification information of the devices;

receiving at the requesting device the identification information transmitted by at least one of the plurality of devices using a second multicast address;

selecting one of devices whose identification information has been received; and

transmitting from the requesting device the identification information of the selected one of the devices and the data to be processed through the network using a third multicast address.

25. A method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are



connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting from said requesting device a search packet through the network using a first multicast address so as to obtain identification information of the devices;

receiving at the requesting device the identification information transmitted by at least one of the plurality of devices using a second multicast address;

selecting one of devices whose identification information has been received;

transmitting from the requesting device the identification information of the selected one of the devices and the data to be processed through the network using a third multicast address;

receiving an acknowledgement of receipt of the data to be processed transmitted by said requested device using a fourth multicast address; and

repeating the step of transmitting identification information and data to be processed and the step of receiving the acknowledgement of receipt until the data to be processed is completely transmitted.

26. A method of receiving data to be processed through a TCP/IP-based network to which a plurality of devices

including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

- receiving from the requesting device a search packet which is transmitted through the network using a first multicast address;

- transmitting identification information through the network using a second multicast address; and

- receiving from the requesting device the identification information of said requested device and the data to be processed which are transmitted through the network using a third multicast address.

27. A method of receiving data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

- receiving a search packet which is transmitted by said requesting device through the network using a first multicast address;

- transmitting identification information through the network using a second multicast address;

receiving the identification information of said requested device and the data to be processed which are transmitted by said requesting device through the network using a third multicast address;

transmitting an acknowledgement of receipt of the data to be processed using a forth multicast address when the data to be processed is received; and

repeating the step of receiving the identification information and data to be processed and the step of transmitting the acknowledgement of receipt step until the data to be processed is completely received.

28. A method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting a request for obtaining identification information of the plurality of devices except said requesting device from the requesting device through the network using a first address;

receiving the request at the requested device;

transmitting the identification information from the requested device through the network using a second

multicast address in reply to the request;

transmitting from the requesting device the identification information of the requested device and the data to be processed through the network using a third multicast address; and

receiving the identification information and the data to be processed at the requested device.

29. A computer program to be executed by a computer to achieve a method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting from said requesting device a search packet through the network using a first multicast address so as to obtain identification information of the devices;

receiving at the requesting device the identification information transmitted by at least one of the plurality of devices using a second multicast address;

selecting one of devices whose identification information has been received; and

transmitting from the requesting device the identification information of the selected one of the

devices and the data to be processed through the network using a third multicast address.

30. A computer program to be executed by a computer to achieve a method of receiving data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being transmitted by said requesting device and received by said requested device, the method comprising the steps of:

receiving from the requesting device a search packet which is transmitted through the network using a first multicast address;

transmitting identification information through the network using a second multicast address; and

receiving from the requesting device the identification information of said requested device and the data to be processed which are transmitted through the network using a third multicast address.

31. A computer program to be executed by a computer to achieve a method of transmitting data to be processed through a TCP/IP-based network to which a plurality of devices including a requesting device and a requested device are connected, the data to be processed being

transmitted by said requesting device and received by said requested device, the method comprising the steps of:

transmitting a request for obtaining identification information of the plurality of devices except said requesting device from the requesting device through the network using a first address;

receiving the request at the requested device;

transmitting the identification information from the requested device through the network using a second multicast address in reply to the request;

transmitting from the requesting device the identification information of the requested device and the data to be processed through the network using a third multicast address; and

receiving the identification information and the data to be processed at the requested device.